



# LOUISVILLE SLUGGER

## One city's miraculous EMS transformation

By Mannie Garza

The July 2003 *USA Today* series on EMS in the United States came at just the right time for Louisville, Ky., Mayor Jerry Abramson.

Just six months earlier, the city had merged with surrounding Jefferson County to become Metro Louisville, the nation's 16th largest city. For the new entity to run efficiently, Abramson needed to deal with redundancies in government

agencies and services, including two very different—and ineffective—EMS systems. “I had two of everything, like Noah,” he says.

The *USA Today* articles by former paramedic Bob Davis described EMS in the United States as fragmented and inconsistent, lacking in data collection and performance measures, failing to consistently and honestly measure response

times, and divided by turf wars between fire and EMS services and responders.<sup>1,2</sup>

That pretty much described Louisville-area EMS at the time. The Louisville Fire Department (LFD) provided ambulance transport in the city, supplemented by a private ambulance service for low-priority transports. Jefferson County EMS (JCEMS), an independent third agency, served the Louisville suburbs, along with 18 fire departments that provided a patchwork of first response services without unified command and no crossover into each other's jurisdictions. Both LFD and JCEMS were short-

handed, requiring EMTs and paramedics to work substantial overtime.

In *USA Today*, Davis also identified four solutions modeled on the nation's best EMS systems: accurate, meaningful performance measures; extensive and effective early and public-access defibrillation programs; empowered EMS medical directors; and strong leadership from city, medical and public safety officials.

Abramson was determined to provide that strong leadership to build a medically focused, data-driven, research-based model for the delivery of prehospital EMS to Metro



Louisville. To improve cardiac arrest survival rates, he said, would take communitywide bystander CPR training, the arrival of EMTs with defibrillators within six minutes and arrival of



Mayor Jerry Abramson

ALS within eight minutes at least 90% of the time. Moreover, he aimed to provide every person in Louisville with “the same highest levels of medical care” 24/7 with the shortest response times possible. The mayor also laid out a general plan to reach those goals.

As a first step, Abramson—who had engineered the merger of EMS into the fire department in 1995—announced in January 2004 that he was taking EMS out of LFD and merging it with JCEMS to create a new entity: Louisville Metro EMS (LMEMS).

The next step was to find someone to head LMEMS. “We did a national search to find a change agent,” Abramson says. “I had read a lot of articles on this and decided the best department would be managed by an emergency physician. I wanted a physician in charge because I wanted EMS decisions to be based on data and information.”

In late 2004, Metro Louisville hired Neal Richmond, MD, a deputy New York City EMS medical director, as the first chief executive officer of LMEMS, which was officially established on Feb. 14, 2005. Then things really started moving.

“Among our many challenges were the mergers of two [agencies], two cultures with different protocols, workforces and CAD systems that didn’t communicate,” Richmond says.

## Staffing strategies

Many LFD EMTs and paramedics were cross-trained as firefighters and elected to stay with the fire department, leaving LMEMS in need of dozens of providers. “In the past year and a half, we hired and trained 150 people to make up for the vacancies and because of attrition,” Richmond says. Mayor Abramson’s budget for July 2005–June 2006 included funding to add 46 new EMS positions, giving LMEMS 122 paramedic positions and 128 EMT positions.

In May 2006, LMEMS had 91 paramedics and 140 EMTs and announced it was starting a new degree program with Spaulding University to help currently certified LMEMS EMTs (and others with Kentucky EMT certifications) become paramedics.

Before the creation of LMEMS, LFD employees belonged to the International Association of Fire Fighters, and JCEMS providers belonged to the Teamsters.



Neal Richmond, MD

During the reorganization, the EMTs and paramedics who elected to join LMEMS from both departments voted to join Teamsters Local 783.

LMEMS EMT Lee Dennison, a shop steward for Local 783, worked for JCEMS for eight years before the merger, but knew most of the 100 or so EMTs and paramedics who elected to leave LFD and join LMEMS. They worked together at scenes and waiting in emergency departments. “We were all pretty optimistic about the merger, but it’s hard to get used to change, and you can’t please everyone,” he says.

According to Dennison, the biggest



One of 10 “fly cars” (4-wheel drive SUVs) that LMEMS uses to supplement strategically deployed ambulances.

PHOTOS COURTESY LMEMS



LMEMS kicked off a new deployment strategy this January aimed at putting up to 65% more response vehicles on the street while reducing mandatory overtime.

issue was the changes in shift schedules. “A lot of people at LFD were working 24s or 48s, having one day off then working another 48. JCEMS was on 12-hour shifts, but was short-staffed, so we often worked 14 to 18 hours.”

Richmond says, “The urban workforce wasn’t happy about coming off the 24-hour shifts, but they often were working 36 hours [straight], and that’s not good for patient care.” He began by putting everyone on 12-hour shifts, but found “if we used the 12-hour system, the only way to make the workweek work required \$1.2 million in overtime.”

To solve that equation, LMEMS changed to a unique 10-hour shift model in January 2006. Now, every two weeks, EMTs and paramedics work eight 10-hour days, including one flex day. “On a flex day, a field provider is not assigned to a fixed truck,” Richmond explains. “First, they come in for three hours of continuing education—perhaps protocol updates or training in new devices—and then get assigned to fill in gaps. By using a ‘flex platoon,’ we can beef up the coverage and staff our trucks at a higher level.”

Because the new system no longer requires the help of the private ambulance service, Richmond says, “We’ve offered the revenues [that would have gone to the] private [company] back to our workforce for voluntary overtime.”

## Ranks & roles

Richmond also added some new rungs to the EMS career ladder by creating new ranks: Thirty-nine paramedic field training officers with the rank of lieutenant now act as clinical preceptors and supervise a pod of ambulances, 12 EMT field training officers have the rank of sergeant, 12 captains “are the people grinding out the schedule on an hour-to-

hour basis,” he says. Twelve majors function as supervisors (with two on duty at all times) and are being “morphed” into quality assurance officers.

“Having an emergency physician as CEO is really different,” Dennison says. “He’s actually there, and we can walk right in and he’ll answer [our] questions.”

“We have a labor-management committee with an equal number of labor and management people,” he adds. “Dr. Richmond is there so we can talk about any problems with the service and work things out. This was new, too; we weren’t used to having any input.”

## Crunching the numbers

Creating an evidence-based EMS system requires data to track the demand for resources, and Louisville EMS data was scarce. “We didn’t have the money to bring in an expensive consultant to do demand modeling,” Richmond says, “so we dug up two years of data and had it all entered [into a database].” They then used the de-identified patient data related to the physical location of calls by priority levels to do demand analysis.

Based on that analysis, LMEMS kicked off a new deployment strategy this January aimed at putting up to 65% more response vehicles on the street while reducing mandatory overtime.

## Fly cars

The keystone of the new strategy: 10 “fly cars” to supplement strategically deployed ambulances. The Ford Explorers are staffed by paramedics and are fully equipped for ALS care, but do not do transports.

“We created response time ‘clouds’ around postulated unit locations to see what calls we could get to in a certain

time from each location,” Richmond says. “[Because] we are suffering from a paramedic shortage, we looked at our response times and turnaround times and decided it didn’t make sense to keep all our paramedics on ambulances.”

With the fly cars, he says, they can “send an ALS responder to an ALS call when we need one, BLS providers to a BLS call and both to a call when necessary. When they’re not needed, the ALS people are free to do other things and don’t need to stay at a hospital” waiting to off-load a patient.

“We have a combination of ALS trucks with a paramedic and EMT and BLS trucks with two EMTs,” Dennison says. “I’m on a BLS truck, and we do lots of runs where we have a paramedic on the way. If we don’t need ALS, we cancel that paramedic, freeing up the fly car. Or the fly car may get there first and cancel the truck. If the paramedic rides in with the patient, one EMT will get in the fly car and follow the truck to the hospital.”

According to Richmond, as of May, LMEMS was using six to eight fly cars, plus two or three supervisor cars staffed by ALS providers who can also provide patient care. It has 19 dual-staffed ambulances, and can put up to 25 ambulances on the street when necessary.

### First response

LMEMS also created agreements with the 18 suburban departments plus LFD to develop a 24/7 mutual-aid, first response system. “We said, ‘If you do this for us, we will provide medical supplies, oxygen, medical direction, BLS training and education, and help develop a unified quality assurance program,’” Richmond says. The new agreements include components on medical roles for special operations, with specific, defined rules for EMTs and paramedics for each situation.

In June, the Metro Louisville region began installing a new fire and EMS CAD system to allow everyone to communicate, and Richmond has applied for a federal FIRE grant to equip every unit with a mobile data terminal complete with automatic vehicle location and a global positioning system. “I’m

convinced this will make a huge difference in our response times,” he says.

## Results

LMEMS is still a toddler, but it’s already demonstrating some impressive results, as illustrated by a 17-page “Post Deployment Comparison Report” that uses diagrams and graphs—not words—to compare trends from between Sept. 1–Dec. 31, 2005, with those from Jan. 1–April 30, 2006—including run and transport volumes; priority levels; response, on-scene, transport and turnaround times; overtime and collections. The report paints an impressive picture.

“We’ve cut overtime despite a 25% increase in call volume,” Richmond notes. “We’re handling many more calls and getting there faster, just by changing the shifts. By using fly cars, we’re getting an ALS provider there 87% of the time in eight minutes or less from when the wheels start rolling to the scene.”

So what does Mayor Abramson think of LMEMS now? “So far it’s been great,” he says. “Neal Richmond has been as good as I’d hoped he’d be—and then some.”

The mayor continues to demonstrate a commitment to his EMS vision: On May 25, he announced that his budget for fiscal year 2006–2007 (which began July 1) included \$468,000 to purchase “state-of-the-art handheld computers” to allow LMEMS field providers to easily collect data and transmit it electronically to a central system.

Louisville is an outstanding example of how EMS can be dramatically improved in an urban/suburban region when political leaders put patient care first and politics second, and when agencies, individuals and unions work cooperatively toward a common goal. **JEMS**

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## References

1. Davis R: “Many lives are lost across USA because emergency services fail.” *USA Today*. July 28, 2003.
2. Davis R: “Six minutes to live or die.” *USA Today*. July 29, 2003.